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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/830,507   | 06/15/2001  | Chai-Jing Chou       | 44407               | 8190             |
| 22515  | 7590        | 10/30/2003           | EXAMINER            |                  |
| THE DOW CHEMICAL COMPANY<br>INTELLECTUAL PROPERTY SECTION<br>2301 N BRAZOSPORT BLVD<br>FREEPORT, TX 77541-3257 |             |                      | YOUN, TAE H         |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1714                |                  |

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                        |                        |                     |
|------------------------|------------------------|---------------------|
| <b>Advisory Action</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                        | 09/830,507             | CHOU ET AL.         |
|                        | <b>Examiner</b>        | <b>Art Unit</b>     |
|                        | Tae H Yoon             | 1714                |

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a)  The period for reply expires 2 months from the mailing date of the final rejection. *Notice of Appeal*

b)  The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.  A Notice of Appeal was filed on October 2, 2003. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2.  The proposed amendment(s) will not be entered because:
  - (a)  they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b)  they raise the issue of new matter (see Note below);
  - (c)  they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d)  they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4.  Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5.  The a) affidavit, b) exhibit, or c) request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.
6.  The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7.  For purposes of Appeal, the proposed amendment(s) a) will not be entered or b) will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-19.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8.  The proposed drawing correction filed on \_\_\_\_\_ is a) approved or b) disapproved by the Examiner.
9.  Note the attached Information Disclosure Statement(s)( PTO-1449) Paper No(s). \_\_\_\_\_.
10.  Other: \_\_\_\_\_.

Tae H Yoon  
Primary Examiner  
Art Unit: 1714

**ATTACHMENT TO 2<sup>ND</sup> ADVISORY ACTION**

Even though cancellation of claims 3, 4, 7, 8 and 14 would overcome the rejection under 35 USC 112, first paragraph, the amendment will not be entered since it is confusing because applicant states cancellation of claims 3, 4, 7, 8 and 14 as well as amended claim 14. Also, applicant failed to present amended claim 14.

With respect to the rejection based on prior art, applicant states that Suss et al teach a formation of intercalation with a smectite-type clay as an organic cation-organic anion complex and the examiner agrees with that. Thus, applicant asserts that the instantly recited feature, the edges of the multilayered material bound to a polyvalent anionic organic material, is not taught. But, the examiner disagrees with such assertion since the science involved in the instant invention and the teaching of Suss et al is basically the same. The instant invention recites that the quaternary ammonium intercalated multi-layered silicate material having been reacted with a polyvalent anionic organic material. Suss et al teach the same at col. 12, lines 39-44, "the formation of an organic cation-organic anion complex which is intercalated with the clay and the cationic exchange sites of the clay are substituted with the organic cation". Thus, said clay is intercalated with the organic cation and said the intercalated organic cation forms a complex with organic anion which is present at around the edge of the clay. Note that the clay itself does not react with the organic (poly)anion. Also, contrary to applicant's assertion, Suss et al teaches polyvante anionic organic material at col. 11, lines 64-68 as pointed out in the previous office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H Yoon whose telephone number is (703) 308-2389. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tae H Yoon  
Primary Examiner  
Art Unit 1714

THY/October 7, 2003

RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 1714

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Chou, et al.

Serial No.: 09/830,507

Group Art Unit: 1714

Filed: June 15, 2001

Examiner: Yoon

For: NANOCOMPOSITE

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8/5/03

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P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

REPLY TO ADVISORY ACTION

*Do not enter*  
*100-70483*

In reply to the Advisory Action mailed June 30, 2003, Applicants  
request the Office to reconsider the present application in view of the following  
amendments and remarks.

MAILED BY: *Cg*  
AUG 5 2003